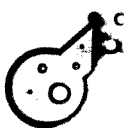


Name _____

Date _____

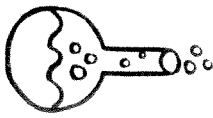
CHEMICAL REACTIONS TEST



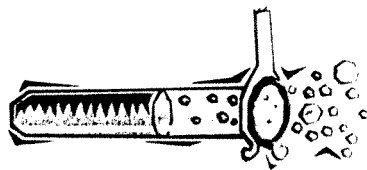
Multiple Choice: Identify the letter of the choice that best completes the statement or answers the question.

- In a chemical formula, the number of each type of atom in the compound is shown by numbers called _____.
 - Superscripts
 - Chemical symbols
 - Combination numbers
 - Subscript
- A group of covalently bonded atoms that acts together as one charged atom is called _____. An example of BaSO_4 _____.
 - crystal
 - covalent bond
 - ionic bond
 - polyatomic ion
- The elements that make up a compound and the exact number of atoms of each element in a unit of the compound can be shown in a _____.
 - Chemical formula
 - Chemical symbol
 - Subscript
 - Superscript
- A chemical bond that occurs when atoms share electrons is called _____.
 - Covalent
 - Ionic
 - Magnetic
 - polyatomic
- The _____ tells you how many electrons an atom must gain, lose, or share to become stable.
 - Atomic mass
 - Atomic number
 - Ionic number
 - Oxidation number
- What is the total number of atoms in the compound of $\text{Cu}_2(\text{ClO}_3)_2$?
 - 2
 - 3
 - 5
 - 9
- A(n) _____ chemical equation has the same number of atoms of each element on each side of the equation.
 - Balanced
 - Complex
 - Simple
 - Unbalanced
- Each substance on the left side of the arrow in a chemical equation is a _____.
 - Catalyst
 - Coefficient
 - Product
 - Reactant

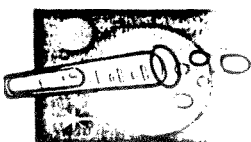
- Which of the following is a balanced equation?
 - $\text{AgNO}_3 + \text{NaCl} \rightarrow 4\text{AgCl} + 2\text{NaNO}_3$
 - $2\text{AgNO}_3 + 2\text{NaCl} \rightarrow 3\text{AgCl} + 2\text{NaNO}_3$
 - $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
 - $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + 3\text{NaNO}_3$
- What type of reaction is shown in the following chemical equation?
 $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$
 - Decomposition
 - Double displacement
 - Single displacement
 - Synthesis
- When one element replaces another element in a compound, the reaction is a _____ reaction.
 - Decomposition
 - Double displacement
 - Single displacement
 - Synthesis
- The breaking down of a substance into two or more simpler substances is _____.
 - Decomposition
 - Displacement
 - Catalyst
 - Synthesis
- Each substance to the right of the arrow in a chemical equation is called _____.
 - Catalyst
 - Inhibitor
 - Reactant
 - Product
- Numbers that precede symbols and formulas in a chemical equation are _____.
 - Catalysts
 - Coefficient
 - Superscripts
 - Subscripts
- According to the law of conservation of mass, how does the mass of the products in a chemical reaction compare to the mass of the reactants?
 - There is no relationship
 - The mass of the products is greater
 - The mass of the reactants is greater
 - The masses are equal
- A chemical reaction in which two or more substances combine to form another substance is called a _____.
 - Synthesis reaction
 - Decomposition reaction
 - Product
 - Reactant

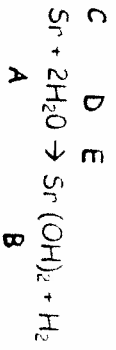


26. A compound is produced from its elements during a _____
- Chemical change
 - Physical change
 - Mixture
27. A compound is described by a _____
- Chemical formula
 - Chemical equation
28. Which is an example of a covalent compound?
- C_6H_6
 - $NaCl$
 - $NaOH$
 - $LiOH$
29. Which is an example of an ionic compound?
- H_2O
 - Al_2O_3
 - NH_3
 - C_6H_6
30. If atom A has 2 electrons in its outer shell, it will _____
- Gain 6 electrons
 - Lose 2 electrons
 - Gain 2 electrons
 - Lose 6 electrons
31. _____ can be changed in a chemical equation to balance it.
- Coefficients
 - Subscripts
 - Elements
 - Superscripts
32. _____ cannot be changed in a chemical equation to balance it.
- Coefficients
 - Subscripts
 - Elements
 - Superscripts
33. What type of reaction is: $2K + 2H_2O \rightarrow 2KOH + H_2$?
- Decomposition
 - Double replacement
 - Synthesis
 - Single replacement
34. What type of reaction is: $Pb(NO_3)_2 + 2KI \rightarrow PbI_2 + 2KNO_3$?
- Decomposition
 - Double replacement
 - Synthesis
 - Single replacement
35. What type of reaction takes in energy?
- Exothermic
 - Catalyst
 - Endothermic
 - radioactive
36. What type of reaction releases energy?
- Exothermic
 - Catalyst
 - Endothermic
 - radioactive



17. According to the law of conservation of mass, if two atoms of hydrogen are used as a reactant, how many atoms of hydrogen must be part of the product?
- 0
 - 1
 - 2
 - 4
18. What type of reaction is shown in the following equation: $2H_2O \rightarrow 2H_2 + O_2$?
- Decomposition
 - Double replacement
 - Single displacement
 - Synthesis
19. When most chemical reactions take place, some _____ in the reactants must be broken a process that release energy.
- Compounds
 - Chemical bonds
 - Precipitates
 - Products
20. The kinds of bond that forms between atom A and atom B if atom A loses electrons and atom B gains these electrons is _____
- Covalent bond
 - Ionic bond
 - Polyatomic
21. The kind of bond that forms when metals and nonmetals combine is _____
- Covalent bond
 - Ionic bond
 - Polyatomic
22. The kind of bond that forms when nonmetals combine is _____
- Covalent bond
 - Ionic bond
 - Polyatomic
23. The kind of bond that is formed between carbon and oxygen atoms is _____
- Covalent bond
 - Ionic bond
 - Polyatomic
24. The kind of bond that is formed between magnesium and chlorine is _____
- Covalent bond
 - Ionic bond
 - Polyatomic
25. When an atom "lends" one or more electrons, it becomes a _____ but when "borrows" electrons it becomes a _____
- Positive ion, negative ion
 - Negative ion, positive ion
 - Positive ion, positive ion
 - Negative ion, negative ion
- an atom





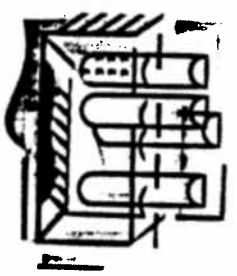
Fill in the chart below

Oxidation #

Element	# of Protons	# of Electrons	# of Valence Electrons
50 Potassium			
51 Bromine			
52 Magnesium			
53 Sulfur			

electrons needed to fill outer shell

Element	# of Protons	# of Electrons	# of Valence Electrons
54 Silicon			
55 Helium			
56 Arsenic			
57 Selenium			



Label each of the following chemical reactions as an endothermic or exothermic reaction. Please mark X for exothermic and N for endothermic.

- 42. Burning candle _____
- 43. Ice cubes forming _____
- 44. Melting ice cream _____
- 45. Baking a cake _____
- 46. Burning sugar _____

Balance the following chemical equations

